

A REVIEW OF THE AMERICAN SPECIES OF XYLOCELIA.  
(Hymenoptera; Psenidae.)

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The genus *Xylocelia* has received comparatively little attention from systematists so far as the American species are concerned. Dr. A. S. Packard recognized the genus as represented in our fauna in 1867 under the name *Diodontus* of authors (nec Curtis), and placed in it the new species *americanus*. In 1892 Mr. W. J. Fox described five new species and gave a synoptic key for the six species then known. Since 1892 a number of new species have been described by Messrs. Cockerell and Fox, Mr. H. L. Viereck, Mr. S. A. Rohwer and Dr. E. G. Titus. While working over the material in the collection of the University of Nebraska recently, seven new forms were noted by the writer. With this addition the list of known American forms of *Xylocelia* totals twenty-five and it seems desirable to present at this time a synoptic key for separating the species. In cases where examples of a species have not been at hand, the characters used in the table are based on the original descriptions. No doubt more careful collecting of our smaller wasps will bring other new forms to light, and it is hoped that this review may be of service in determining the described American species. The types of the seven new species here described are in the entomological collection of the University of Nebraska. The writer wishes to acknowledge his indebtedness to Dr. E. G. Titus for the loan of the type of *Xylocelia adamsi*, and to Prof. Myron H. Swenk for going over the manuscript.

Genus *Xylocelia* Rohwer.

1837. *Diodontus*, Shuckard, Essay indig. Fossor. Hymen., p. 186, (nec Curtis).  
1867. *Diodontus*, Packard, Proc. Ent. Soc. Phila., vi, p. 392.  
1892. *Diodontus*, Fox, Trans. Amer. Ent. Soc., xix, p. 314.  
1915. *Xylocelia*, Rohwer, Proc. U. S. Nat. Mus., xxxix, p. 243.

## SYNOPSIS OF THE SPECIES.

## FEMALES.

- |  |                        |
|--|------------------------|
| 1. Mandibles yellowish or whitish.....   | 4                      |
| Mandibles entirely black.....  | 2                      |
| 2. Mesoscutum with the punctures sparse and indistinct on the posterior half; anterior half of front striato-punctate, the striæ becoming more or less obsolete on the posterior half..... | <i>ater.</i>           |
| Mesoscutum with punctures distinct and rather close throughout; front with strong separated punctures.....   | 3                      |
| 3. All the tibiæ and tarsi reddish brown, more or less testaceous beneath; nervures of anterior wings yellowish testaceous.....  | <i>adamasi</i>         |
| All the tibiæ and tarsi black; nervures of anterior wings black.....   | <i>nigritus</i>        |
| 4. Posterior lobes of pronotum yellowish.....  | 8                      |
| Posterior lobes of pronotum entirely black.....  | 5                      |
| 5. Posterior face of propodeum with a median, moderately deep, wedge-shaped fovea, the remainder of the posterior face finely, irregularly rugose.....                                     | 6                      |
| Posterior face of propodeum without any wedge-shaped fovea, the entire surface coarsely reticulate.....  | 7                      |
| 6. Apical antennal joint with a strong longitudinal furrow beneath; all the tibiæ testaceous; emargination of labrum broad and deep.....   | <i>antennatus</i>      |
| Apical joint of antennæ not furrowed beneath, simple; all the tarsi more or less blackish; emargination of labrum narrow, moderately deep.....   | <i>metathoracicus</i>  |
| 7. Legs entirely black; head smooth, shining, sparsely punctate.....   | <i>americanus</i>      |
| Legs more or less testaceous; head not smooth, distinctly punctate; palpi light testaceous; labrum broadly and shallowly emarginate.....   | <i>spiniferus</i>      |
| 8. All the tibiæ yellowish or orange red, not black.....   | 9                      |
| Middle and hind tibiæ more or less blackish; wing nervures blackish.....   | 10                     |
| 9. Abdomen shining, with very close, fine punctures; nervures of wings testaceous.....   | <i>occidentalis</i>    |
| Abdomen shining, impunctate; nervures of wings black.....  | <i>florissantensis</i> |
| 10. Front rather densely punctate; abdomen distinctly petiolate.....   | <i>gillettei</i>       |
| Front sparsely but distinctly punctate; abdomen not distinctly petiolate, subsessile.....  | 11                     |
| 11. Postero-lateral angles of propodeum strongly produced; posterior face of propodeum finely, sparsely rugose, with a rather deep, median, wedge-shaped fovea.....                        | <i>striatus</i>        |
| Postero-lateral angles of propodeum not strongly produced; posterior face of propodeum rather coarsely reticulate.....   | <i>siouxensis</i>      |

## MALES.

- |   |                          |
|---|--------------------------|
| 1. Mandibles yellowish or whitish.....  | 7                        |
| Mandibles entirely black.....   | 2                        |
| 2. Posterior lobes of pronotum black.....   | 3                        |
| Posterior lobes of pronotum yellowish; antennal joints 8-12 serrate beneath.....                | <i>maestus</i>           |
| 3. Antennal joints not spined beneath.....  | 4                        |
| Antennal joints 9 or 10-12 slightly spined beneath.....   | 5                        |
| 4. Abdomen microscopically punctate, appearing impunctate.....                                  | <i>flavitarisus</i>      |
| Abdomen punctured with strong, distinct, separated punctures.....                               | <i>cockerelli</i>        |
| 5. Mesoscutellum striated posteriorly; antennal joints 9-12 slightly spined beneath.....        | <i>argentinae</i>        |
| Mesoscutellum punctured like the mesoscutum; antennal joints 10-12 slightly spined beneath..... | 6                        |
| 6. Cheeks striato-punctate; propodeum indistinctly channeled above.....                         | <i>vallicola</i>         |
| Cheeks hardly striated; propodeum not channeled above, subsp.....                               | <i>vallicola salicis</i> |

- |     |  |                        |
|-----|--|------------------------|
| 7.  | Posterior lobes of pronotum black.....   | 13                     |
|     | Posterior lobes of pronotum pale or yellowish.....                                 | 8                      |
| 8.  | Antennal joints 9-12 not serrate beneath.....                                      | 9                      |
|     | Antennal joints 9-12 serrate beneath.....  | 10                     |
| 9.  | Mesoscutum subopaque, with minute almost adjoining punctures. <i>brunneicornis</i> |                        |
|     | Mesoscutum shining, sparsely punctured.....  | <i>fraternus</i>       |
| 10. | Clypeus produced in the middle, with two large, obtuse teeth.....                  | <i>bidentatus</i>      |
|     | Clypeus not produced in the middle.....  | 11                     |
| 11. | Front subopaque, very densely punctate, appearing granulose.....                   | <i>occidentalis</i>    |
|     | Front more or less shining, with separated or sparse punctures.....                | 12                     |
| 12. | Front with distinct, separate punctures; frontal impressed line faint.             |                        |
|     | Front shining, with a few scattered punctures; frontal impressed line              | <i>neomexicanus</i>    |
|     | very distinct.....   | <i>florissantensis</i> |
| 13. | Front sparsely punctured; lineolate running into tessellate; antennæ               |                        |
|     | simple, not serrate beneath.....   | <i>leguminiferus</i>   |
|     | Front densely punctured; antennæ more or less serrate beneath.....                 | 14                     |
| 14. | Distance between the posterior ocelli a little greater than the distance           |                        |
|     | between the lateral ocellus and the nearest eye margin, lateral margin             |                        |
|     | of posterior face of propodeum not toothed.....                                    | <i>crassicornis</i>    |
|     | Distance between the posterior ocelli distinctly less than the distance            |                        |
|     | between the lateral ocellus and the nearest eye margin; lateral margin             |                        |
|     | of posterior face of propodeum toothed.....  | <i>rugosus</i>         |

### **Xylocelia occidentalis** Fox.

1892. *Diodontus occidentalis* Fox, Trans. Amer. Ent. Soc., xix, p. 315.

Type locality: Southern California and Arizona. The University collection contains one female and four males from the following Nebraska localities:

Sowbelly Canyon, Sioux County, June 23, 1911 (R. W. Dawson), 1 ♀; Glen, Sioux County, July 12, 1910 (L. Bruner), 2 ♂; Monroe Canyon, Sioux County, August 16, 1912 (R. W. Dawson), 1 ♂; Monroe Canyon, Sioux County, August 20, 1908 (R. W. Dawson), 1 ♂.

### **Xylocelia rugosus** Fox.

1892. *Diodontus rugosus* Fox, Trans. Amer. Ent. Soc., xix, p. 315.

Type locality: Montana, Illinois. Two specimens at hand from Omaha; July 2, 1913 (L. T. Williams), ♂ and August 1, 1914 (L. T. Williams), ♂.

### **Xylocelia brunneicornis** Viereck.

1906. *Diodontus brunneicornis* Viereck, Trans. Amer. Ent. Soc., xxxii, p. 212.

Type locality: Sedgwick County, Kansas.

### **Xylocelia florissantensis** Rohwer.

1909. *Diodontus florissantensis* Rohwer, Trans. Amer. Ent. Soc., xxv, p. 107.

Type locality: Florissant, Colorado.

***Xylocelia crassicornis* Viereck.**1904. *Diodontus crassicornis* Viereck, Trans. Amer. Ent. Soc., xxx, p. 243.

Type locality: Corvallis, Oregon.

***Xylocelia fraternus* Rohwer.**1909. *Diodontus fraternus* Rohwer, Trans. Amer. Ent. Soc., xxxv, p. 106.

Type locality: Florissant, Colorado.

***Xylocelia flavitarsus* Fox.**1892. *Diodontus flavitarsus* Fox, Trans. Amer. Ent. Soc., xix, p. 316.

Type locality: Colorado.

***Xylocelia leguminiferus* Cockerell and Fox.**1897. *Diodontus leguminiferus* Cockerell and Fox, Proc. Acad. Nat. Sci. Phila., p. 141.

Type locality: Sante Fe, New Mexico.

***Xylocelia neomexicanus* Rohwer.**1909. *Diodontus neomexicanus* Rohwer, Trans. Amer. Ent. Soc., xxxv, p. 106.

Type locality: Rowe, New Mexico.

***Xylocelia maestus* n. sp.**

♂. Length 5.5mm. Labrum not exposed; front strongly rugoso-punctate; vertex and occiput finely granulate with distinct punctures; genæ with close elongate punctures which give them the appearance of being striato-punctate; impressed line of front wanting; antennal joints 8-12 serrate beneath; antennæ puberulent, joints 1 and 2 of flagellum equal; mesoscutum strongly punctured, densely so anteriorly; mesoscutellum with fine, well separated punctures; episterna anteriorly very coarsely reticulate, posteriorly finely so, tending to become obliquely rugose; propodeum above coarsely reticulate, posterior face with larger reticulations, supra-medially there is a large triangular fovea, much larger than the others on the posterior surface; abdomen distinctly microscopically punctate, the punctures becoming larger on the apical segments; lower portion of front, and clypeus silvery pubescent. Wings hyaline, stigma and nervures of anterior wings piceous. Black; posterior lobes of pronotum yellowish; palpi, tegulæ, all the tibiæ in front, anterior tarsi, and basal half of middle tarsi, testaceous.

♀. Unknown.

Type: A male collected at Omaha, Nebraska, August 29, 1914 (L. T. Williams).

One paratype collected at the same time and place. Most nearly related to *flavitarsus*, from which it differs in having the antennæ serrate beneath, the posterior lobes of the pronotum yellowish, and other minor characters.

**Xylocelia argentinæ** Rohwer.1909. *Diodontus argentinæ* Rohwer, Trans. Amer. Ent. Soc., xxxv, p. 104.

Type locality: Cripple Creek, Colorado.

**Xylocelia vallicolæ** Rohwer.1909. *Diodontus vallicolæ* Rohwer, Trans. Amer. Ent. Soc., xxxv, p. 104.

Type locality: Florissant, Colorado.

**Xylocelia vallicolæ salicis** Rohwer.1909. *Diodontus vallicolæ salicis* Rohwer, Trans. Amer. Ent. Soc., xxxv, p. 105.

Type locality: Boulder, Colorado.

**Xylocelia americanus** Packard.1867. *Diodontus americanus* Packard, Proc. Ent. Soc. Phila. vi, p. 393.

Type locality: Brunswick, Maine.

**Xylocelia spiniferus** n. sp.

♀. Length 4.5-5mm. Labrum broadly and very shallowly emarginate; front finely granulate with distinct punctures; vertex more closely punctured, cheeks sparsely punctured; antennæ puberulent, first joint of flagellum slightly longer than the second; mesoscutum with fine, distinct punctures, the punctures quite dense anteriorly; mesoscutellum shining, microscopically punctate; episterna coarsely reticulate, obliquely rugose posteriorly; propodeum coarsely reticulate above, more openly so on the posterior face; sides of propodeum coarsely rugose; the lateral margins of the propodeum produced, forming a short, blunt spine; abdomen apparently impunctate; wings hyaline; stigma and nervures of anterior wings piceous. Black; mandibles yellowish (except reddish at tips); palpi, tegulæ, anterior tibiæ and tarsi, intermediate tibiæ in front, intermediate tarsi basally, apex of posterior femora and base of posterior tarsi, all light testaceous.

♂. Unknown.

Type: A female collected at Omaha, Nebraska, June 12, 1914 (L. T. Williams); paratypes as follows: Omaha, June 12, 1914 (L. T. Williams), 2 ♀; Omaha, July 19, 1914 (L. T. Williams), 1 ♀; Omaha, July 20, 1914 (L. T. Williams), 2 ♀.

Apparently related to *americanus* from which it differs in having the legs more or less testaceous, the front distinctly and fairly closely punctate, and the tarsal joints not unusually spinose.

**Xylocelia antennatus** n. sp.

♀. Length 4.5mm. Labrum deeply and roundly emarginate; front finely granulate, distinctly punctate; vertex and occiput similarly sculptured; cheeks sparsely punctate; antennæ short, slightly longer

than the head; the last joint with a longitudinal furrow beneath; mesoscutum distinctly punctate, densely so anteriorly; mesoscutellum with small, shallow punctures, slightly impressed medially, episterna anteriorly, quite coarsely reticulate, posteriorly finely rugose; upper portion of the propodeum finely reticulate, grading off into a finely rugose sculpture on the posterior face and the sides; posterior face of propodeum with a median, wedge-shaped, fairly deep fovea; abdomen with fine, well separated punctures; the four apical segments somewhat pubescent; wings hyaline; stigma and nervures of the anterior wings blackish. Black; mandibles yellowish (except the tips reddish); tegulae and the tibiae testaceous.

♂. Unknown.

Type: A female collected at Omaha, Nebraska, July 15, 1914 (L. T. Williams).

This species and the following one differ from the other American species of this genus in the fine sculpture of the posterior face of the propodeum and the episterna. They are probably most closely related to *americanus*, from which this species differs most obviously in the above characters and by the furrow of the apical antennal joint beneath.

#### ***Xylocelia metathoracicus* n. sp.**

♀. Length 4.5-5mm. Labrum narrowly and deeply emarginate; front microscopically granulate, with distinct well-separated punctures; frontal impressed line distinct; vertex, occiput and cheeks sculptured like the front; antennae short, slightly longer than the head, puberulent; first joint of flagellum slightly longer than the second; mesoscutum shining, densely punctate anteriorly, the punctures sparser posteriorly; mesoscutellum slightly impressed medially, rather sparsely punctate; episterna anteriorly somewhat roughly sculptured, slightly reticulate and strongly, deeply punctate, the sculpture tending to become finely rugose posteriorly, upper surface of the propodeum finely reticulate, the posterior face finely rugose, provided with a small, median, wedge-shaped fovea; sides of the propodeum finely granulate; abdomen microscopically, but distinctly punctate; pygidium narrow, about twice as long as broad, rounded at the apex, uniformly punctured; wings hyaline, nervures of anterior wings dark testaceous, stigma black. Black; mandibles except the tips yellowish; tegulae and anterior tibiae in front testaceous.

♂. Unknown.

Type: A female taken at Omaha, Nebraska, July 2, 1913 (L. T. Williams). Related to *antennatus*. Differs in having the apical joint of the antennae simple, the sides of the propodeum more delicately sculptured and only the anterior tibiae in front testaceous.

**Xylocelia gillettei** Fox.

1892. *Diodontus gillettei* Fox, Trans. Amer. Ent. Soc., xix, p. 316.

Type locality: Fort Collins, Colorado. One female specimen in the University collection from Harrison, Nebraska, August 20, 1912 (R. W. Dawson).

**Xylocelia striatus** n. sp.

♀. Length 6-6.5mm. Labrum not exposed; front very finely granulate, sparsely punctate; impressed line of front wanting; antennæ distinctly longer than the head, slightly puberulent; first joint of flagellum distinctly longer than the second; mesoscutum shining, densely punctate anteriorly, very sparsely punctate posteriorly; mesoscutellum shining, with a very few shallow punctures; episterna coarsely, transversely rugose; upper surface of propodeum with a fairly distinct, reticulate inclosed space, laterally with the upper surface obliquely rugose; the posterior face finely rugose, with a median, wedge-shaped fovea; sides of the propodeum sparsely, obliquely striate, the posterolateral angles produced, forming a blunt spine; abdomen finely, distinctly punctate; wings hyaline; stigma and nervures of anterior wings piceous. Black; mandibles except the tips, the posterior lobes of the pronotum yellowish; tegulae and anterior tibiae in front yellowish testaceous. Form robust.

♂. Unknown.

Type: A female collected at Dickinson, North Dakota, July 4, 1914 (O. A. Stevens); one paratype collected at Laramie, Wyoming. May easily be distinguished by the coarse sculpture of the episterna, the characteristic sculpture of the posterior face of the propodeum, the presence of blunt lateral spines on the propodeum and the robust form.

**Xylocelia siouxensis** n. sp.

♀. Length, 5mm. Labrum not exposed; front finely granulate, sparsely punctate; impressed line of front distinct; vertex, occiput and cheeks sculptured like the front; antennæ distinctly longer than the head, slightly puberulent; first joint of flagellum distinctly longer than the second; mesoscutum shining, densely punctate anteriorly, very sparsely punctate on the posterior half; mesoscutellum shining very sparsely punctate; episterna above coarsely reticulate anteriorly, below and posteriorly, finely, transversely rugose; propodeum above finely reticulate, the posterior face more shining, with quite large, shallow foveae, supra-medially there is a small, somewhat depressed, triangular area; sides of the propodeum rather shining, with four or five coarse, oblique striae; abdomen microscopically punctate; pygidium about one and one-fourth times as long as wide; strongly punctate; wings hyaline, stigma and nervures of anterior wings piceous. Black;

mandibles, except the tips and posterior lobes of the pronotum yellowish; tegulae and anterior tibiae in front testaceous.

♂. Unknown.

Type: A female collected in Monroe Canyon, Sioux County, Nebraska, August 19, 1912 (R. W. Dawson). Related to *striatus*, but is smaller, more slender, has the propodeum sculptured differently and the postero-lateral angles of the propodeum not produced.

***Xylocelia nigrilus* Fox.**

1892. *Diodontus nigrilus* Fox, Trans. Amer. Ent. Soc., xix, p. 317.

Type locality: Colorado.

***Xylocelia adamsi* Titus.**

1908. *Diodontus adamsi* Titus, Ecology of Isle Royale, Michigan Survey, p. 319.

The following description is drawn from the type specimen kindly loaned the writer by Dr. E. G. Titus.

♀. Length 7.1mm. Labrum deeply and angulately emarginate, the teeth formed by the emargination acute; front with strong, rather close punctures, finely granulate between the punctures; median impressed line of front faint; vertex, occiput and cheeks punctured like the front; (antennae missing in the type); mesoscutum with strong, rather close punctures, denser on the anterior and posterior margins; suture between the mesoscutum and mesoscutellum foveolate; mesoscutellum distinctly punctured; episterna coarsely reticulate anteriorly, obliquely rugose posteriorly; upper surface of propodeum coarsely reticulate; posterior face of propodeum coarsely reticulate, supra-medially with a large, pentagonal enclosed area; sides of propodeum with a few, coarse rugae; abdomen microscopically punctate; pygidium triangular, about one and one-fourth times as long as wide, strongly punctured on the basal half; wings hyaline, stigma black, nervures yellowish testaceous. Black; tegulae brown, yellowish anteriorly; all the tibiae and tarsi reddish brown, more or less testaceous beneath.

♂. Unknown.

Type: A female collected at Isle Royale, Michigan (Adams). Related to *nigrilus*; but the sculpture of the propodeum, coloration of anterior wing veins, and of the tibiae and tarsi, are different.

***Xylocelia ater* n. sp.**

♀. Length 6-7mm. Labrum large, deeply and angulately emarginate; lower portion of front tending to be striato-punctate; upper portion of front fairly closely and shallowly punctate; median impressed line

of front very faint; vertex, occiput and cheeks punctured like the front; mesoscutum shining, densely punctured anteriorly, the punctures fine and sparse on the posterior half; mesoscutellum finely and rather closely punctured; episterna coarsely reticulate anteriorly, coarsely obliquely rugose posteriorly; upper surface of propodeum coarsely reticulate; posterior face of propodeum coarsely reticulate, with a large, supra-medial, triangular fovea; sides of propodeum very coarsely obliquely rugose; abdomen rather closely, microscopically punctate; pygidium triangular, about one and one-half times as long as wide, strongly punctured; wings hyaline; stigma and nervures of anterior wings piceous. Entirely black.

♂. Unknown.

Type: A female collected at Omaha, Nebraska, July 27, 1914 (L. T. Williams). Four paratypes as follows: Omaha, June 20, 1914 (L. T. Williams), 1 ♀; Omaha, July 1, 1913 (L. T. Williams), 1 ♀; Omaha, August 29, 1914 (L. T. Williams), 1 ♀; one female specimen without data.

Related to *nigritus*, but differs in the differently sculptured front and propodeum, and the mesoscutum not strongly punctured before the mesoscutellum.

***Xylocelia cockerelli* Rohwer.**

1909. *Diodontus cockerelli* Rohwer, Trans. Amer. Ent. Soc., xxxv, p. 105.

Type locality: Florissant, Colorado.

***Xylocelia bidentatus* Rohwer.**

1911. *Diodontus bidentatus* Rohwer, Proc. U. S. Nat. Mus., xxxv, p. 560.

Type locality: Nerepsis, New Brunswick. This species cannot be the male of *Xylocelia adamsi*, as has been suggested by Rohwer, because of the different structure of the clypeus.